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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
YUEN, KAN	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/797,520	WING, DANIEL G.	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/9/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Drawings

1. The drawings are objected to because some portions in Figs. 1-11 are made difficult to read. Applicant is suggested to upgrade all the figures in digital format. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the

amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Objections

3. Claim 15 objected to because of the following informalities:

In claim 15, line 2, the term "the probe packet" seems to refer back to the term "the trace packet". If this is true, it is suggest to the term "the probe packet" to "the trace packet".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 7-15, 21-23, 27-32, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Adhikari et al. (Pub No.: 2004/0252646).

For claims 1, 21, 30 Farrell et al. disclosed the method of varying a Time To Live (TTL) value in a trace packet to intentionally cause an intermediate node in the packet switched network to send back a packet expiration notice (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. However, Farrell et al. did not disclose the method of receiving an intermediate node time value in the packet expiration notice indicating when the intermediate node received the trace packet. Adhikari et al. from the same or similar fields of endeavor teaches the method of receiving an intermediate node time value in the packet expiration notice indicating when the intermediate node received the trace packet (see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Adhikari et al. in the network of Farrell et al. The motivation for using the

method as taught by Adhikari et al. in the network of Farrell et al. being that the method reduces the system waiting time, and increases the network speed.

Regarding claims 2, 22, 31 Adhikari et al. disclosed the method of including sending a source time value in the trace packet indicating when the trace packet was sent and receiving both the source time value and the intermediate node time value in the packet expiration notice (see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Regarding claims 3, 23, 32, Farrell et al. disclosed the method of setting a first TTL value in a first trace packet causing a first intermediate node to send back a first packet expiration notice with a first time value associated with a one-way packet delay to the first intermediate node; and setting a second larger TTL value in a second trace packet causing a second intermediate node to send back a second expiration notice with a second time value associated with a one-way packet delay to the second intermediate node (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1). The second large TTL is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers.

Regarding claim 7, 27, 36 Adhikari et al. disclosed the method of formatting the trace packet as a Real Time Protocol (RTP) payload packet that travels along a same

media path as corresponding RTP payload packets containing media content (see paragraph 0056, lines 1-16).

Regarding claims 8, 28, 37 Farrell et al. disclosed the method of varying the TTL value and setting a marker bit in the trace packet causing a destination endpoint for the trace packet to send a corresponding Real Time Control Protocol (RTCP) report (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

Regarding claims 9, 29, 38 Adhikari et al. disclosed the method of determining whether or not to transmit a media stream according to contents of the RTCP report (see paragraph 0056, lines 1-16).

Regarding claim 10, Farrell et al. disclosed the method of a processor sending a packet that intentionally causes an intermediary node to send back a message (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. However, Farrell et al. did not disclose the method of the message containing an intermediate node timestamp value identifying when the packet reached the intermediate node. Adhikari et al. from the same or similar fields of endeavor teaches the method of the message containing an intermediate node timestamp value identifying when the packet reached the intermediate node (see

paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Adhikari et al. in the network of Farrell et al. The motivation for using the method as taught by Adhikari et al. in the network of Farrell et al. being that the method reduces the system waiting time, and increases the network speed.

Regarding claim 11, Farrell et al. disclosed the method of the processor causes the intermediate node to decrement a Time To Live (TTL) value in the packet and send back the message when the TTL value is decremented to zero (see paragraph 0021, lines 1-10, and fig. 1).

Regarding claim 12, Farrell et al. disclosed the method of the processor modifies the TTL values in multiple packets causing multiple different intermediate nodes in a network to send back messages each containing intermediate node timestamp values when the TTL values in the packets are decremented to zero by that intermediate node (see paragraph 0021, lines 1-10, and fig. 1). The source node 102 or the processor configured to modified TTL value to be 2 for the second packet.

Regarding claim 13, Adhikari et al. disclosed the method of the processor discerns when the packet was sent and compares that time with the intermediate node timestamp value returned in the message to determine the one-way packet delay between the processor and the intermediate node (see paragraph 0059, lines 1-7,

paragraph 0060-0063, and see paragraph 0090, lines 1-10). In this reference, endpoint A transmits a packet to endpoint B, A writes the departure time S from A in the packet itself. When B receives the packet, it writes the arrival time U in the packet. B immediately sends the packet back to A, writing the departure time V from B in the packet.

Regarding claim 14, Adhikari et al. disclosed the method of the processor formats the packet as a Real Time Protocol (RTP) payload packet that travels along a same media path as associated RTP payload packets containing an actual media payload (see paragraph 0056, lines 1-16).

Regarding claim 15, Farrell et al. disclosed the method of the processor sets a Time To Live (TTL) value and a marker bit in the probe packet that causes a destination endpoint for the packet to send back a Real Time Control Protocol (RTCP) report (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, and fig. 1). The trace or test packet is injected with TTL values, while gradually increasing. Upon time out, or when TTL=0, the intermediate node 106A sends back an error message 107 to source node 102. The marker bit is when TTL=0.

7. Claims 4, 24, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Adhikari et al. (Pub No.: 2004/0252646), as applied to claim 3 above, and further in view of Hefel et al. (Pat No.: 5563875).

For claims 4, 24, 33 Farrell et al. disclosed the method of setting incrementally increasing TTL values in additional trace packets until a destination endpoint sends back a packet expiration notice with a time value associated (see paragraph 0021, lines 1-13). The TTL value is increased for the second packet. However, Farrell et al. and Adhikari et al. did not disclose the method of sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint. Hefel et al. from the same or similar fields of endeavor teaches the method of sends back a packet expiration notice with a time value associated with a one-way packet delay from the source endpoint to the destination endpoint (see column 6, lines 20-25). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Hefel et al. in the network of Farrell et al. and Adhikari et al. The motivation for using the method as taught by Hefel et al. in the network of Farrell et al. and Adhikari et al. being that the method reduces the system waiting time, and increases the network speed.

8. Claims 5, 6, 25, 26, 34, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Adhikari et al. (Pub No.: 2004/0252646), as applied to claim 3 above, and further in view of Makowski et al. (Pub No.: 2004/0240431).

For claims 5, 25, 34 Farrell et al. disclosed the method of using the ICMP reply message as the packet expiration notice (see paragraph 0006, lines 12-18). However,

Farrell et al. did not disclose the method of using a Network Time Protocol (NTP) timestamp value for the intermediate node time value; inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) reply message. Makowski et al. from the same or similar fields of endeavor teaches the method of using a Network Time Protocol (NTP) timestamp value for the intermediate node time value; inserting the NTP timestamp value into an Internet Control Message Protocol (ICMP) reply message (see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the source and the destination. The timestamp can be generated in any well known manner such as NTP. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Makowski et al. in the network of Farrell et al. and Adhikari et al. The motivation for using the method as taught by Makowski et al. in the network of Farrell et al. and Adhikari et al. being that the method enhances the packet delay.

Regarding claims 6, 26, 35 Makowski et al. disclosed the method of using bits in an existing field of the ICMP reply message for containing the NTP timestamp value (see paragraph 0032, lines 1-12). The optional data fields of the ICMP echo request message, which has bits to represent the capacity of the fields.

9. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Wen et al. (Pat No.: 6947381).

For claim 16, Farrell et al. disclosed the method of a processor configured to receive a trace packet containing an expiration value causing the processor to discard the trace packet and generate an expiration message that identifies a time value associated with when the trace packet was received by the processor (see paragraph 0027, lines 1-17, and fig. 1 and 2). The processor or an intermediate node 106 is configured to receive an application packet or trace packet from a source node 102. If node 106 detects error in the packet, it will generate an ICMP response error message back to source 102. The error corresponds to the TTL value had expired in transit. However, Farrell et al. did not disclose the method of discard expired packet. Wen et al. from the same or similar fields of endeavor teaches the method of discard expired packet (see column 2, lines 1-5). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Wen et al. in the network of Farrell et al. The motivation for using the method as taught by Wen et al. in the network of Farrell et al. being that the method increases the system capacity.

Regarding claim 17, Farrell et al. disclosed the method of the network processing device is located at an intermediate location in a network between a source endpoint sending the trace packet and a destination endpoint for the trace packet (see paragraph 0027, lines 1-17, and fig. 1 and 2). The network-processing device is the intermediate node 106.

Regarding claim 18, Farrell et al. disclosed the method of the processor is configured to decrement the expiration value and forward the trace packet toward the

destination endpoint when the decremented expiration value is not zero, the processor further configured to discard the trace packet and send the expiration message back to the source endpoint when the expiration Value is decremented to zero (see paragraph 0017, lines 1-10, paragraph 0020, lines 1-12, paragraph 0021, lines 1-10, paragraph 0024, lines 5-12, and fig. 1). The second large TTL or expiration value is 2 as shown in paragraph 0021. The use of TTL value is used to measure the delay experience by routers. The second application packet is return to the source when the TTL value is 0.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Wen et al. (Pat No.: 6947381), as applied to claim 16 above, and further in view of Makowski et al. (Pub No.: 2004/0240431).

For claim 19, Farrell et al. and Wen et al. disclosed all the subject matter of the claimed invention with the exception of the processor uses an Internet Control Message Protocol (ICMP) reply message as the expiration message and uses a Network Time Protocol (NTP) timestamp value as the time value. Makowski et al. from the same or similar fields of endeavor teaches the method of the processor uses an Internet Control Message Protocol (ICMP) reply message as the expiration message and uses a Network Time Protocol (NTP) timestamp value as the time value (see paragraph 0032, lines 1-12). The ICMP is inserted with timestamp from the source and the destination. The timestamp can be generated in any well known manner such as NTP. Thus, it

would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Makowski et al. in the network of Farrell et al. and Wen et al. The motivation for using the method as taught by Makowski et al. in the network of Farrell et al. and Wen et al. being that the method enhances the packet delay.

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell et al. (Pub No.: 2006/0098586), in view of Wen et al. (Pat No.: 6947381), as applied to claim 16 above, and further in view of Adhikari et al. (Pub No.: 2004/252646).

For claim 20, Farrell et al. and Wen et al. disclosed all the subject matter of the claimed invention with the exception of the trace packet is formatted as a media payload packet that uses a same media path as associated media packets containing a media payload. Adhikari et al. from the same or similar fields of endeavor teaches the method of the trace packet is formatted as a media payload packet that uses a same media path as associated media packets containing a media payload (see paragraph 0056, lines 1-16). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the method as taught by Adhikari et al. in the network of Farrell et al. and Wen et al. The motivation for using the method as taught by Adhikari et al. in the network of Farrell et al. and Wen et al. being that the method accurately determines the link parameters such as the delay and the quality of service.

Conclusion

12. The prior art made of record and not replied upon is considered pertinent to applicant's disclosure. Aono et al. (Pat No.: 6944132), Stringer (Pub No.: 2002/0083186), and Takahashi (Pat No.: 6023455), are show systems which considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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